LETTERS TO THE EDITOR

Regarding "No evidence of a gender difference in carotid blood velocities across stenoses"

Comerota et al[1] reported significantly higher blood flow velocities in women across stenoses of 55% to 75% of the internal carotid artery (ICA) than in men. Given the law of conservation of mass, it is difficult to understand how a given percentage of luminal narrowing can cause a different increase in velocity across genders. Comerota et al used a small sample size (<40 in each group), neglected to use an appropriate correction for multiple comparisons, such as the Bonferroni correction, and did not report statistics for age (a potential confound) in the groups where the significant differences were found.

The John Hunter Hospital Cardiovascular Unit database was queried for all carotid duplex studies since the inception of the database in 1991. The analysis included 6,165 studies comprising 3,287 men and 2,878 women. Student's t test for independent samples was used to determine if there was an effect of gender on carotid artery blood flow velocities in both ICA and common carotid artery (CCA) on the left and right. Because of the number of comparisons being made, a Bonferroni correction was used, and a result of $P < .004$ was considered significant. With this sample size, assuming a statistical power of 0.8, a mean difference of 0.06 m/s in the ICA would be detectable at the level of $P < 0.004$. Comerota et al found a mean difference of 0.49 m/s.

In our dataset, women had significantly lower CCA velocities than men (left side: $t = 5.327$, df[6163], $P < .0001$; right side: $t = 4.646$, df[6179], $P < .0001$). Furthermore, females were an average of 2 years older than their male counterparts ($t = -6.583$, df[6228], $P < .0001$). Age was significantly correlated with velocities of the CCA ($r = -.295$, $P < .0001$) and the ICA ($r = -.048$, $P < .0001$). This confound may account for the 0.03-m/s difference found in both the right and left CCA velocities between men and women.

Comerota et al found a gender difference at 50% and 60% stenosis. The arteries where a 50% to 79% stenosis was found on duplex were extracted from the group as a whole and compared across genders for both the right and left sides. This gave a sample size of 202 men and 174 women with right-sided stenoses and 382 men and 336 women with left-sided stenoses. No significant differences in velocities were found for either the left or the right common or internal carotid arteries in this group.

A χ^2 analysis, performed using gender and category of stenosis, found that men are significantly more likely to have moderate and severe disease than women (right side: $\chi^2 = 12.134$, $P < .001$; left side: $\chi^2 = 13.235$, $P < .001$.

In conclusion, there is no evidence of a gender difference in blood flow velocities across stenoses in our relatively large dataset. The findings of Comerota et al may be confounded by an effect of age differences.

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REFERENCE

1. Comerota, AJ, Salles-Cunha SX, Daoud Y, Jones L, Beebe HG. Gender differences in blood velocities across carotid stenoses. J Vasc Surg 2004; 40:939-44.

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Regarding "Gender differences in blood velocities across carotid stenoses"

I read with interest the comments of the John Hunter Hospital Cardiovascular Unit's description of their database on carotid duplex findings. They have a large experience that I am sure is comparable to most others. Most large centers that performed an analysis as they have would derive the same conclusions, namely that there are no differences in findings in women compared with men. Because of analyses like these, which compare only one duplex examination with another, gender differences have failed to be appreciated.

The rigor of the method described in their report requires emphasis, since the difference between our methods of analysis is likely the reason for the difference in our observations and conclusions. The gender difference study reviewed a database of 938 carotid arteriograms with accompanying carotid duplex examinations that were independently interpreted. The arteriograms were then listed by decile of disease with the corresponding carotid duplex finding. Results for men and women were analyzed. To completely avoid bias, only the most severely diseased artery was studied for each patient.

After this analysis, it was evident that women had higher velocities than men for similar degrees of arteriographic stenosis, especially at the clinically relevant thresholds of disease. There are numerous reasons for this finding, which we attempted to elucidate in the discussion.

I appreciate the work performed by the John Hunter Hospital Cardiovascular Unit; however, to challenge our observations, I believe a study that used the same methods would be required. I would encourage them to do so and look forward to the results.

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Regarding "Aortobifemoral graft infection with *Mycobacterium tuberculosis*: Treatment with abscess drainage, debridement, and long-term administration of antibiotic agents"

The case report by Raffetto et al (J Vasc Surg 2004;40:826-829) describing the treatment of an aortobifemoral graft infected with tuberculosis raises but does not address a longstanding unanswered question about the etiology of Takayasu arteritis. For decades, an association between Takayasu arteritis and tuberculosis has been noted. There is a school of thought holding that Takayasu arteritis may be caused or triggered by *Mycobacterium tuberculosis*. Many studies from the 1960s and 1970s showed a much higher incidence of tuberculosis in subjects with Takayasu arteritis than in the general population. For example, in an autopsy series of 20 patients with Takayasu arteritis in India, Kinare found active tuberculosis in 60%, vs 10% in routine necropsy cases in the region.[1] I have come across two such cases in my own practice. One of these was an Asian female exchange student presenting synchronously with scrofula and Takayasu arteritis. Immunology studies have shown that patients with Takayasu arteritis have a heightened immune response to various tuberculous antigens, and there are case reports of Takayasu arteritis resolving with treatment of concomitant active tuberculosis.[2-4] Finally, in the case described, tuberculosis almost certainly was reactivated in response to treat-